3COM SWITCH 4210G GIGABIT FAMILY

From top: 3Com Switch 4210G PWR 24-Port, Switch 4210G 24-Port, Switch 4210G 48-Port

OVERVIEW

The 3Com® Switch 4210G Gigabit Family delivers quad-speed performance—10/100/1000 and 10-Gigabit–with plug-and-play "Gigabit-to-the-Desktop" switching and rich, easy-to-use features perfect for cost-conscious medium-sized businesses wanting a fast, efficient network upgrade.

Layer 2 switching along with Layer 3 static routes make these ideal for wiring closet, workgroup connectivity. For great flexibility, four of the ports are dual-personality, operating either as 10/100/1000 or SFP-based fiber. Specific models support up to four optional 10-Gigabit high-speed links, enabling connectivity to a core network or to high performance servers.

Enterprise-class security features include IEEE 802.1X network login, SSL encrypted device log-in and Access Control Lists.

These are the family switch models:

> 3Com Switch 4210G 24-Port:
24 auto-negotiating 10BASE-T/100BASE-TX/1000BASE-T ports, four of which are dual-personality 10/100/1000 or 100/1000 SFP; two expansion slots for up to four 10-Gigabit ports.

> 3Com Switch 4210G 48-Port:
48 auto-negotiating 10BASE-T/100BASE-TX/1000BASE-T ports, four of which are dual-personality 10/100/1000 or 100/1000 SFP; two expansion slots for up to four 10-Gigabit ports.

> 3Com Switch 4210G PWR 24-Port:
24 auto-negotiating 10BASE-T/100BASE-TX/1000BASE-T ports, four of which are dual-personality 10/100/1000 or 100/1000 SFP; Power over Ethernet on all 10/100/1000 ports; two expansion slots for up to four 10-Gigabit ports.

KEY BENEFITS

AFFORDABLE MANAGED GIGABIT CONNECTIVITY

The Switch 4210G family is 3Com's most economical Gigabit fully managed stackable switch line. Achieve up to a 10-times performance improvement with Gigabit, at prices many still associate with 10/100 switches.

FUTURE PROOF NETWORKING

3Com Switch 4210G switches provide outstanding investment protection by providing quad-speed 10/100/1000 Mbps and 10-Gigabit switching. Gradually move users to Gigabit speeds, with full backward compatibility with slower 100 Mbps and 10 Mbps networking.

Select Switch 4210G models support 10-Gigabit uplinks using "4500G-style" uplink modules.

EMPOWERS APPLICATION CONVERGENCE

The Switch 4210G family combines high performance Gigabit switching, QoS and traffic management features to help ensure essential applications get the appropriate priority for efficient utilization of network resources.

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KEY BENEFITS (continued)

The PWR model with available Power over Ethernet readies your network for running converged applications such as voice, wireless and video surveillance over the network.

ENHANCES MANAGEMENT AND CONTROL

The Switch 4210G family is easy to use and manage, designed to increase business productivity by reliably supporting business applications. Cluster together up to 255 devices for easy administration, with single IP management across 3Com switching lines.

Models with 10-Gigabit expansion ports can be stacked together up to four high, with robust features from 3Com's IRF stacking technology including distributed link aggregation.

GIVES FLEXIBLE, BASIC LAYER 3 ROUTING

Layer 3 static routing, with 32 definable static routes, gives this switch added flexibility to handle more complex networking needs.

REDUNDANT POWER SYSTEM SUPPORT

The 3Com Switch 4210G models support a redundant power system (RPS) connection.

For this model, the RPS unit delivers redundant power to switches so there is continued operation should the switch unit power supply fail. This allows for continuous operation of advanced Enterprise networks, particularly important for converged networks running IP phones on the network.

3Com H3C RPS Systems

3Com switches are compatible with 3Com H3C® RPS solutions. These are enterprise-class power redundancy systems that work with many 3Com fixed-configuration switches. 3Com Corporation manufactures networking equipment under the H3C brand for sale into many markets.

The H3C RPS 1000 is 1U high and provides multiple power output connections to support multiple switch units at the same time. Two power rectifiers can be installed for 1+1 load sharing and power redundancy. It supports switches with -54V RPS connections, and delivers sufficient power to fully provision all PoE ports of a switch with full power redundancy.

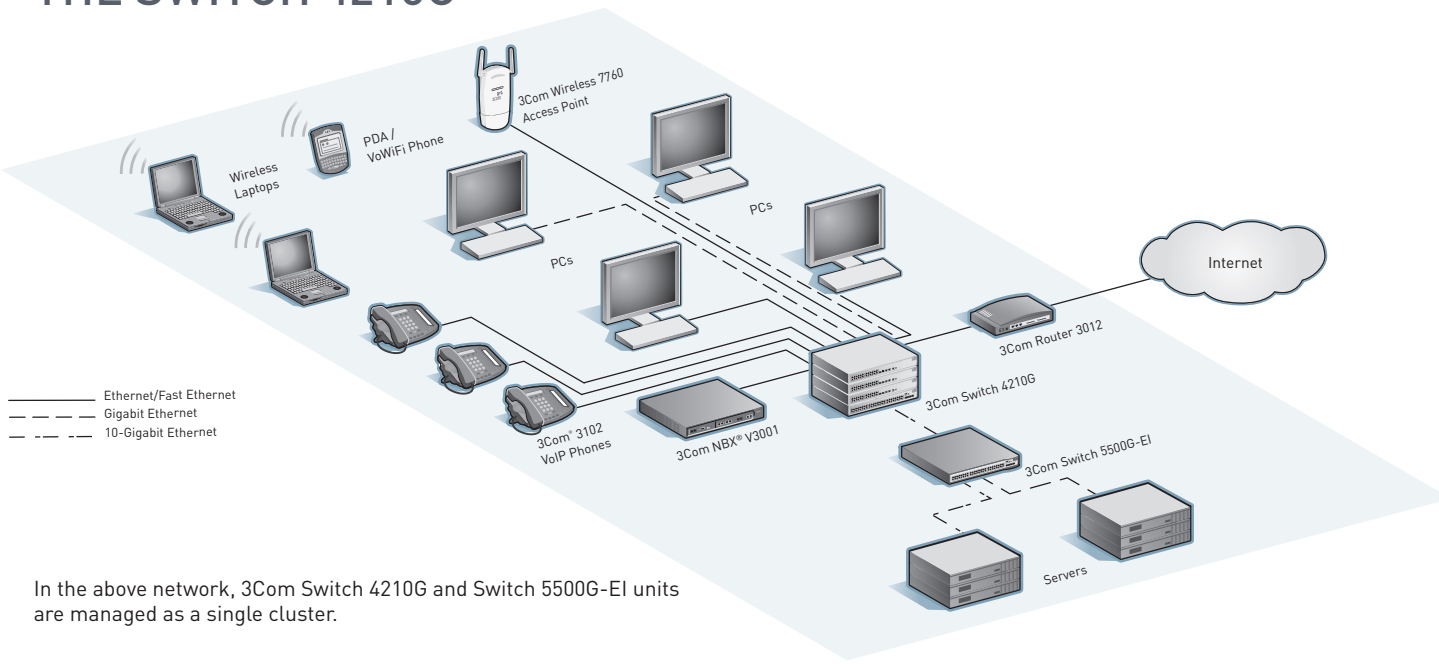
SUPPORTED BY LIMITED LIFETIME HARDWARE WARRANTY

3Com gives a Limited Lifetime Hardware Warranty on the Switch 4210G Gigabit Family. Also provided is Advanced Hardware Replacement, with next business day shipment available in most regions, and telephone support and limited lifetime software updates.

FEATURE HIGHLIGHTS

FEATURE	DESCRIPTION
IEEE 802.1X network access control	Standards-based security combined with RADIUS authentication
RADIUS Authenticated Device Access	Authentication of attached devices via MAC address for an additional (RADA) level of endpoint security.
Access Control Lists (ACLs)	Enable usage policies at each point of access to the network via the switch
Bandwidth rate limiting and eight QoS priority queues	Enforce controls on each port for efficient use of network resources and priority prioritization of delay-sensitive traffic.
"Dual-personality" Gigabit Ethernet interfaces	Choice of copper or fiber media for flexible uplinks.
Multicast filtering with IGMP snooping versions 1, 2 and 3	Eliminate unneeded traffic on the network, improve network efficiency.
Spanning Tree, Rapid Spanning Tree, and Multiple Spanning Tree support	Improve network resiliency and availability.
Power over Ethernet models	Prepare the network for Voice over IP or wireless access points.
100 MB and 1000 MB fiber connections	Use SFPs to add fiber connections to the network. Dual-speed support makes network migration easier.
Secure management	Authentication and encryption of management traffic via Secure Shell (SSH) version 2, HTTPS and SNMP version 3.
3Com Operating System	Proven software featured in 3Com premium enterprise switches such as the Switch 4500, 5500 and 7750 families and enterprise MSR routers.
Service and Support	Backed by 3Com Global Services and authorized partners with demonstrated expertise in network assessment, implementation and maintenance

SMALL-TO-MEDIUM LAN CONFIGURATION SUPPORTED BY THE SWITCH 4210G



In the above network, 3Com Switch 4210G and Switch 5500G-EI units are managed as a single cluster.

PRODUCT WARRANTY AND OTHER SERVICES

Warranty	3Com Limited Lifetime Warranty. For as long as the original end user owns the product, or for five years after 3Com discontinues the of sale of the product, whichever occurs first.
Hardware coverage	Covers the complete unit including power supply and fan.
In-warranty hardware replacement*	Advanced Hardware Replacement of hardware for the duration of the warranty. In the US 48 contiguous states this is same-day ship with next business day delivery when call received before noon Pacific time. For Canada, Alaska and Hawaii, this is same-day ship when call received before noon Pacific time. For the rest of the world, it is next-business-day ship. Actual delivery times may vary depending on customer location. Reasonable commercial efforts apply.
Software coverage	90 days for media replacement.
Software updates*	Access to releases with incremental software features and bug fixes. For the Switch 4210G, updates are all releases within the licensed 3Com OS software level.
Telephone support*	Technical support via phone for 90 days.
Online Knowledgebase support*	Access to online troubleshooting tool for the duration of the warranty.

* These services are not included as part of the Warranty and 3Com reserves the right to modify or cancel this offering at any time, without advance notice. This offering is not available where prohibited by law. Services are effective at warranty start date, and are enabled with product registration. Customers receive a user ID with eSupport registration.

SERVICE AND SUPPORT

3Com Global Services offers the resources and talents of a major corporation plus more than two decades of experience in resolving network challenges and delivering business benefits to enterprises around the world.

Global support with a personalized focus in the local language helps drive productivity and minimize expenses. Because 3Com understands both the technology and the business, we're the partner you need to maintain your competitive edge and remain strong.

Additional Service, Support and Training Offerings

3Com Guardian℠ Maintenance Service

This service provides comprehensive on-site support and includes advance hardware replacement, expedited telephone technical support and software upgrades

3Com Express℠ Maintenance Service

This service provides speedy access to 3Com shipment of advance hardware replacements (including a four-hour option), expedited telephone technical support and software upgrades

Network Health Check

An activity-auditing service focused on improving network performance and productivity

Includes traffic monitoring, utilization analysis, problem identification, and asset deployment recommendations

Extensive report provides blueprint for action

Network Installation and Implementation Services

Experts set-up and configure equipment and integrate technologies to maximize functionality and minimize business disruption

For large and complex sites, implementation services include personalized configuration, project management, extended testing and coaching on network administration

Project Management

Provides extra focus and resources that special projects demand

3Com engineers manage entire process from initial specifications to post-project review

Using structured methodology, requirements are identified, projects planned and progress of implementation activities tracked

3Com University

Self-paced and instructor-led technology and product courses, plus certification programs

For additional information, please visit **www.3com.com/services**

SPECIFICATIONS

All information in this section is relevant to all members of the 3Com Switch 4210G Gigabit family, unless otherwise stated.

CONNECTORS

24-port 3CRS42G-24-91

24 auto-negotiating 10BASE-T/100BASE-TX/1000BASE-T ports, 4 of which are dual-personality 10/100/1000 or 100/1000 SFP ports.

2 rear module expansion slots each supporting up to two optional 10-Gigabit ports.

Support for redundant power system (RPS).

RJ-45 console port.

48-port 3CRS42G-48-91

48 auto-negotiating 10BASE-T/100BASE-TX/1000BASE-T ports, 4 of which are dual-personality 10/100/1000 or 100/1000 SFP ports.

2 rear module expansion slots each supporting up to two optional 10-Gigabit ports.

Support for redundant power system (RPS).

RJ-45 console port.

24-port PWR 3CRS42G-24P-91

24 auto-negotiating 10BASE-T/100BASE-TX/1000BASE-T ports, 4 of which are dual-personality 10/100/1000 or 100/1000 SFP ports. IEEE 802.3af in-line power on all 10/100/1000 ports; PoE budget 370W.

2 rear module expansion slots each supporting up to two optional 10-Gigabit ports.

Support for redundant power system (RPS).

RJ-45 console port.

PERFORMANCE

24-port 3CRS42G-24-91 and 3CRS42G-24P-91

128.0 Gbps switching capacity

95.2 Mpps forwarding rate

48-port 3CRS42G-48-91

176.0 Gbps switching capacity

131.0 Mpps forwarding rate

All models

Wirespeed performance across ports

Store-and-forward switching; latency <10 µs

Stacking Performance

With CX4 local connection, each port operates at 12 Gbps, or 24 Gbps full duplex. total bandwidth is 48 Gbps using two ports per switch, or 96 Gbps using four ports per switch.

LAYER 2 SWITCHING

16K MAC addresses in address table

1,024 static MAC addresses (in addition to default address)

Jumbo Frame support

4,094 Port-based VLANs (IEEE 802.1Q)

IEEE 802.3ad Link Aggregation Control Protocol (LACP); automated and manual aggregation

GARP VLAN Registration Protocol (GVRP)

IEEE 802.1 Q-in-Q double-tagged VLANs

Local switch log-in password

Switch login via RADIUS

Trusted IP Management Addresses

Isolated port in VLAN

Blackhole MAC address

Auto-VLAN assignment based on log-in

6 trunk groups per switch

8 10/100/1000 ports or 2 Gigabit ports per group

Auto-negotiation of port speed and duplex IEEE 802.3x full-duplex flow control

Back pressure flow control for half duplex

IEEE 802.1D Spanning Tree Protocol (STP)

IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)

Bridge Protocol Data Unit (BPDU) protection

Internet Group Management Protocol (IGMP) snooping (v1, 2 and 3) on Layer 2 interfaces

Filtering for 128 multicast groups

IEEE 802.1s Multiple Spanning Tree Protocol

Spanning Tree enable / disable per port

Spanning Tree fast-start mode

LAYER 3 SWITCHING

DHCP snooping

Hardware based routing

32 static routes

8 IP interfaces

CONVERGENCE

Eight hardware queues per port

Weighted Round Robin queuing

Strict Priority queuing

IEEE 802.1p Class of Service/Quality of Service (CoS/QoS) on egress

Traffic shaping with port-based egress rate limiting

Application and protocol blocking

Auto VLAN assignment for voice traffic determined by vendor OUI

SECURITY

IEEE 802.1X Network login user authentication:

- EAP over LAN (EAPoL) transport with EAP-MD5, PAP, CHAP, PEAP and EAP-TLS authentication
- Multiple users per port
- 1,024 online users, max.

Local and RADIUS server authentication

RADIUS session accounting

TACACS+ network login

Automatic VLAN assignment via RADIUS server

Wirespeed packet filtering in hardware

ACLs filter at Layers 2, 3 and 4:

- Source/destination MAC address
- Ethernet type
- Source/destination IP address
- Source/destination TCP port
- Source/destination UDP port

RADIUS Authenticated Device Access (RADA): Authenticate devices based on MAC address against RADIUS server and assign VLAN ID and ACL

Port-based MAC address Disconnect

Unknown Device (DUD)

ARP attack detection and suppression

Web authentication

IEEE 802.1X user authentication of switch management on switch Telnet and console sessions; four access privilege levels

Hierarchical management and password protection for management interface

SNMP v3 encryption

SSH v2

Denial of Service protection

SINGLE IP ADDRESS MANAGEMENT

Advanced IRF stacking on the Switch 4210G allows for four-high stacks with features including dynamic link aggregation for simplified management and network scalability.

Clustering provides single IP address and management interfaces for centralized control. Up to 255 devices per cluster across 3Com Switch 4210, 4210G, 4500, 4500G, 4800G, 5500 and 5500G devices.

MANAGEMENT

CLI via console or Telnet

Embedded web management interface

sFLOW performance monitoring

System configuration with SNMP v1, 2c and 3

Comprehensive statistics, including ACL/QoS and IP interface

IPv6 management including pingv6, tracertv6, Telnetv6, TFTPv6, DNSv6 and ARPv6

Remote Monitoring (RMON) groups statistics, history, alarm and events

Many-to-1 port mirroring

Detailed alarm and debug information

Supports ping, remote ping and traceroute

SPECIFICATIONS (continued)

Configuration file for backup and restore; multiple configuration files available

DHCP Relay and UDP Helper

System file transfer mechanisms: Xmodem, FTP, Trivial FTP (TFTP), Secure FTP (SFTP)

Link Layer Discovery Protocol (LLDP and LLDP-MED)

DIMENSIONS

Height: 43.6 mm (1.7 in or 1 RU)

Width: 440.0 mm (17.4 in)

Depth: non-PWR: 300.0 mm (11.8 in)

PWR: 420.0 mm (16.5 in)

Weight:

- 24- : 4.0 kg (8.8 lbs)
- 48- : 4.5 kg (9.9 lbs)
- 24-port PWR: 6.0 kg (13.2 lbs)

POWER SUPPLY

AC line frequency: 50/60 Hz

AC input voltage: 100 to 240 Volts

DC input voltage: –52 to –55 Volts (PWR model only)

Current Rating:

- 24-port: 1.5A
- 48-port: 2.0A
- 24-port PWR: AC 8.0A; DC 15.0A

Power consumption (static system / max fully loaded):

- 24-port: 36W / 103W
- 48-port: 55W / 145W
- 24-port PWR: 55W / 125W + 370W PoE

ENVIRONMENTAL REQUIREMENTS

Operating temperature: 0° to 40°C (32° to 104°F)

Storage temperature: –10° to 70°C (14° to 158°F)

Humidity (operating and storage): 10% to 95% non-condensing

Standard: EN 60068 (IEC 68)

IEEE STANDARDS SUPPORTED

IEEE 802.1D Spanning Tree Protocol (STP)
IEEE 802.1p QoS
IEEE 802.1Q VLANs / VLAN tagging
IEEE 802.1s Multiple Spanning Tree
IEEE 802.1w Rapid Spanning Tree
IEEE 802.1X Network Login Security
IEEE 802.3 Ethernet
IEEE 802.3ab Gigabit Ethernet 1000BASE-T
IEEE 802.3ad Link Aggregation (unit wide)
IEEE 802.3af Power over Ethernet (PWR model only)
IEEE 802.3ae 10-Gigabit Ethernet
IEEE 802.3i 10BASE-T
IEEE 802.3u Fast Ethernet
IEEE 802.3x Flow control
IEEE 802.3z Gigabit Ethernet 1000BASE-X

IETF STANDARDS

RFC 768 UDP Helpe/ Relay
RFC 783 Remote software upgrade TFTP
RFC 791 IP
RFC 792 ICMP Query, support as defined in RFC 1812
RFC 793 TCP
RFC 826 Address Resolution Protocol (ARP)
RFC 854 Telnet
RFC 951 BootP Bootstrap Protocol
RFC 1157 SNMP v1/v2
RFC 1305 Network Time Protocol (NTP) v3
RFC 1350 Remote software upgrade TFTP
RFC 1519 Classless Inter-Domain Routing (CIDR)
RFC 1812 Compliant "Requirements for IP Version 4 Routers"
RFC 1886 DNS Extensions to support IPv6
RFC 2131 DHCP client
RFC 2236 Internet Group Management Protocol (IGMP) Snooping v2
RFC 2284 Network Login 802.1X; EAP over LAN RFC 2284 Transport
RFC 2461 Neighbor Discovery for IPv6/ND
RFC 2463 ICMPv6 for IPv6/ICMP6
RFC 2474 DSCP Diffserv L3/L4 by IP source/dest, tcp/udp port, protocol
RFC 2597 DSCP Diffserv Expedited Forwarding (EF)
RFC 2598 DSCP Diffserv Assured Forwarding (AF)
RFC 2616 HTTP compatibility
RFC 2819 RMON 4 Groups - Stats, History, Alarm, Events (1,2,3,9)
RFC 2865 Remote Authentication Dial-In User RADIUS
RFC 2866 Radius RFC 2138/Accounting RFC 2866
RFC 3376 Internet Group Management Protocol (IGMP) Snooping v3 message types

MANAGEMENT, INCLUDING MIBS SUPPORTED

RFC 1212 Concise MIB definitions
RFC 1215 MIB Monitoring Trap Registration
RFC 1213 MIB II
RFC 1398 Ethernet MIB
RFC 1493 Bridge MIB
RFC 1757 RMON I MIB
RFC 2096 IP Forwarding Table MIB
RFC 2233 Interfaces MIB
RFC 2571 SNMP-Framework-MIB
RFC 2572 SNMP-MPD-MIB
RFC 2573 SNMP Notification MIB/Target MIB
RFC 2574 SNMP v3 MIB
RFC 2575 SNMP Access Control
RFC 2618 MIB BulkConf-RADIUS Servers, BulkConf-Port Security
RFC 2620 MIB
RFC 2665 EtherLike MIB
RFC 2668 MAU MIB
RFC 2674 Bridge MIB Extensions: Q-Bridge, P-Bridge, Extensions
RFC 2737 Entity-MIB
RFC 2819 RMON I MIB
RFC 2863 MIB Disc-Sizing
RFC 2925 MIB Discovery, Topology
RFC 3414 SNMP-User-based-SM-MIB
RFC 3415 SNMP-View-based-ACM-MIB
RFC 3418 SNMP v2
RFC 3621 Power-ethernet MIB
IEEE 802.1X MIB

EMISSIONS/AGENCY APPROVALS

EN 55022: 1998+A1:2000+A2:2003 Class A
FCC Part 15: 2004 Class A
ICES-003: 2004 Class A
VCCI: 2004 Class A
CISPR 22: 2003 Class A
IEC 61000-3-2:2001/EN 61000-3-2:2000
IEC 61000-3-3:2002/EN 61000-3-3: 1995+A1:2001
Korean EMI Class A

IMMUNITY

EN 55024: 1998+A1:2001+A2:2003

SAFETY AGENCY CERTIFICATIONS

UL 60950-1:2003
EN 60950-1:2001
CSA 2.22 # 60950-1:2003
IEC 60950-1:2001
EU RoHS Compliant

SPECIFICATIONS (continued)

WARRANTY AND OTHER SERVICES

Limited Lifetime Hardware Warranty, including fans and power supply

Limited Software Warranty for 90 days

Advance Hardware Replacement with Next Business Day shipment in most regions

Limited Lifetime software updates

90 days of telephone technical support

Refer to www.3com.com/warranty for details.

ORDERING INFORMATION

PRODUCT DESCRIPTION	SKU
Switch 4210G 24-Port	3CRS42G-24-91
Switch 4210G 48-Port	3CRS42G-48-91
Switch 4210G PWR 24-Port	3CRS42G-24P-91
MODULES	
1-Port 10-Gigabit Module (XFP)	3C17768
2-Port 10-Gigabit Module (XFP)	3C17766
2-Port Gigabit Module (SFP)	0231A833
2-Port 10-Gigabit Module (SFP+)	0231A98L
2-Port 10-Gigabit Local Connection Module	3C17767
CABLES	
CX4 Local Connection Cable – 50 cm	3C17775
CX4 Local Connection Cable – 100 cm	3C17776
CX4 Local Connection Cable – 300 cm	3C17777
GIGABIT SFP TRANSCEIVERS	
1000BASE-SX SFP	3CSFP91
1000BASE-LX SFP	3CSFP92
1000BASE-LH SFP	3CSFP97

PRODUCT DESCRIPTION	SKU
FAST ETHERNET SFP TRANSCEIVERS	
3Com 100BASE-FX SFP (Dual-Mode)	3CSFP9-81
3Com 100BASE-LX SFP (Dual-Mode)	3CSFP9-82
10-GIGABIT XENPAK TRANSCEIVERS	
10GBASE-LX4	3CXENPAK91
10GBASE-LR	0231A323
10GBASE-SR	0231A363 or 3CXENPAK94
10GBASE-CX4	3CXENPAK95
10GBASE-ER	0231A364 or 3CXENPAK96
3COM GLOBAL SERVICES	
3Com Network Health Check, Installation Services and Express Maintenance	www.3com.com/services_quote
3Com Global Education and Training Courses	www.education.3com.com

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